

Abstract

A cast composite material is prepared by furnishing an aluminum-based matrix alloy and forming a mixture of free-flowing boron carbide particles and the aluminum-based matrix alloy in molten form which is stirred to wet the matrix alloy to the boron carbide particles and to distribute the particles throughout the volume of the melt. The molten mixture is then cast. The fluidity of the molten mixture is maintained by (a) maintaining the magnesium content of the matrix metal below about 0.2% by weight, or (b) starting with a matrix metal containing less than 0.2% by weight magnesium and adding further magnesium to the mixture a short time before casting, or (c) having at least 0.2% by weight titanium present in the mixture.